UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Reply to attention of: SR-6J

January 8, 2014

Regan S. Williams
Project Manager
Ohio EPA Northeast District Office
2110 E. Aurora Rd.
Twinsburg, OH 44087

Re: December 17, 2013 Ohio EPA Comments on Draft Explanation of Significant Differences (ESD), November 2013
Fields Brook Superfund Site, Detrex Source Control Operable Unit (OU-5)

Dear Sig:

Thank you for the comments on the Draft ESD for the Detrex Source Control Area at the Fields Brook Site. We acknowledge that Ohio EPA's letter does not imply approval of the ESD or ROD at the site. EPA appreciates your past and continuing assistance with the oversight of this technically challenging project.

Here are our responses to your comments:

1. *Ohio EPA agrees that the vacuum enhanced DNAPL extraction wells installed at Detrex have not worked as well as expected, despite efforts over several years to improve the system. The Agency also agrees that a passive extraction well system, combined with the existing partial slurry wall and the ground water interceptor trench, may produce better results.*

Comment Acknowledged.

2. *Ohio EPA agrees that the monitoring data have not shown evidence of DNAPL migration through the subsurface soil or ground water, except within the source area. DNAPL does not appear to be actively migrating from the source area to Fields Brook.*

Comment acknowledged.

3. *During the period of time since the active extraction has been in place a persistent problem has been that the wells become plugged and less effective over time. The problem was exacerbated by the active vacuum system, but how does U.S. EPA propose to ensure that this does not also occur with the passive extraction system?*

EPA cannot ensure that the passive wells will not become plugged, however for the following reasons, we believe it is less likely to happen with a passive system.

Silt currently enters the wells and plugs the screens. As you suggest, this plugging is currently enhanced by the additional forces of the vacuum system, which will be eliminated in the planned passive approach.

In addition the DNAPL is a multi-component fluid. Based on information obtained during the most recent pilot test, the DNAPL contains significant percentages of unknown compounds. The average of eight DNAPL sample analyses identified 29.66% unknowns, with a range of 4% to 46% unknowns. Some portion of the unknown compounds may also have melting points which result in their solidification at ordinary subsurface or room temperatures and contribute to the crystallization. We believe that the vacuum enhancement draws off (volatilizes) the more volatile DNAPL components, allowing the less volatile components to both (1) become more dense/viscous, and (2) crystallize; resulting in well plugging. The passive approach will reduce the volatilization of the volatile DNAPL components, reducing the crystallization and silting effects.

We believe that the passive approach, combined with techniques to carefully periodically remove the DNAPL and/or total fluids, will result in significantly less-plugged well screens. There are several monitoring wells (which are similar to the planned passive extraction well) at the Detrex site which have been operational for long periods of time, and which have performed without significant silting issues. This further suggests that well screen plugging will not be an issue at the passive wells.

4. *Ohio EPA agrees with the goal that the entire source area achieve a residual (non-mobile) concentration of DNAPL in soil. There is a concern though that when the target levels proposed in the ESD are eventually met and the collection wells are abandoned, there will be no way to determine whether the residual concentration is maintained within the source area. Given the difficulty of locating, measuring and monitoring DNAPL in the subsurface soil, the Agency would like to see some mechanism left in place to monitor over the longer term. How does U.S. EPA propose to ensure the longer term protectiveness of this remedy?*

Because the site is not being cleaned up for unrestricted use, there will be both long term monitoring (LTM) and five year reviews in the future. The purpose of the proposed ESD is to change the approach used to reach the residual concentrations of DNAPL. EPA will require a long-term monitoring program to be performed. At this time, it is a too early to have all of the details, but it is anticipated that the LTM program will consist of a combination of groundwater monitoring points and DNAPL monitoring points.

EPA will revise the ESD to clearly indicate that LTM will be required upon completion of the remedy in place, and that the details of the remedy will be worked out in a future update to the O&M Plan.

Please forward this letter within your agency as you deem appropriate.

Sincerely,

W. Owen Thompson
Remedial Project Manager
U.S. EPA, Region 5

cc: Joan Tanaka, SFD
Peter Felitti, ORC